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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,699	10/24/2003	Antonio Belluschi	APV31659	6781

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STEVENS, DAVIDS, MILLER & MOSHER, LLP
Suite 850
1615 L. Street
Washington, DC 20036

EXAMINER	
SALDANO, LISA M	

ART UNIT	PAPER NUMBER
3673	

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/691,699	BELLUSCHI, ANTONIO	
	Examiner	Art Unit	
	Lisa M. Saldano	3673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 2, 4, 9, 10, 12, 15, 17 and 18 are objected to because of the following informalities:

Regarding claim 2, line 5, the applicant recites limitations directed to "the command members." However, prior language from which the claim depends fails to mention command members. Please address this issue of prior basis.

Regarding claim 4, line 3, the applicant recites limitations directed to "the command members." However, prior language from which the claim depends fails to mention command members. Please address this issue of prior basis.

Regarding claim 9, line 2, the applicant claims limitations directed to "said hydraulic piston." However, prior language from which the claim depends fails to mention a hydraulic piston. Instead, the prior language recites a hydraulic actuator. Please address this issue of prior basis.

Regarding claim 10, line 3, the applicant claims limitations directed to "said pipes." However, prior language from which the claim depends fails to pipes. Please address this issue of prior basis.

Regarding claim 12, lines 6-7, it is recommended that a comma be inserted as such for greater clarity: "...to be able to regulate, in an independent and possibly differentiated manner, the individual specific thresholds of intervention."

Regarding claim 15, line 1, the applicant claims limitations directed to "said hydraulic piston." However, prior language from which the claim depends fails to mention a hydraulic piston. Instead, the prior language recites a hydraulic actuator. Please address this issue of prior basis.

Regarding claim 17, lines 4-5, it is recommended that a comma be inserted as such for greater clarity: "...to be able to regulate, in an independent and possibly differentiated manner, the individual specific thresholds of intervention."

Regarding claim 18, lines 2-3, it is recommended that a comma be inserted as such for greater clarity: "...to regulate, in an independent and possibly differentiated manner, the individual specific thresholds of intervention."

Regarding claims 17 and 18, it is recommended that the applicant remove the word "the" from the front of the phrase "individual specific thresholds of intervention" because the prior language fails to detail what exactly the individual specific thresholds of intervention are.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-4, 6, 11, 12 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lazure et al (4,244,123).

Regarding claims 1 and 6, Lazure et al disclose a guidance device for a drain-tile laying machine comprising an operating means with a hydraulic circuit comprising hydraulic pumps 133,149 (see column 7, line 42 – column 8, line 30). Pumps 133,149 are operated by the motor of the tractor 7 used to plow the earth's surface and lay the drain tile (see Figs.1, 3&7). Lazure et al disclose a detection means in the form of a pressure gauge 135, 153 as well as a selector 137 at pump 133. The selector provides a reversible, variable delivery feed feature such that the pump may return fluid to a tank 131 or feed it to a flow control valve 139, which in turn feeds two manually controllable cylinders 141 used to adjust and correct the alignment of a plow. A pressure gauge may provide information to a first receiver 85 regarding pressure values for feed flow control and possible reduction of pump feed delivery through the flow control valve.

Lazure et al also disclose that the pump 149 and a pressure relieve valve 151 along with the pressure gauge 153 may be used for feeding fluid directly to an electric valve 159 via a low pressure relief valve 157. The electric valve 159 automatically feeds a power feeder 161 which serves to drive or push the drain tile out the bottom of the plow as the plow moves forward.

Regarding claim 2, Lazure et al disclose the guidance device as disclosed above wherein the flow control valve 139 comprises a first electric valve 107 therein. Lazure et al further disclose a sensor or first receiver 85 connected to electronic processing means whereby flow control and fluid delivery may be reduced regarding the pump 133 for adjustment of the device.

Regarding claims 3 and 4, Lazure et al disclose that a signal emitter 81 comprises a rotating laser beam generator for reception by the receiver 85.

However, Lazure et al fail to explicitly disclose that the pressure gauge and flow control valves may be used to reduce the delivery of the feed pump specifically for the driving means.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the pressure gauge and flow control valves of Lazure et al to control any aspect of the machine where one desires to detect a particular parameter and to adjust the values of that parameter within a desired range of values. Just as Lazure et al teach that the attitude or depth of the machine may be controlled via detecting gauges and valves interacting with hydraulic pumps, it would be obvious to one of ordinary skill in the art to use those same methods to vary any other aspect of the invention, such at the rate of delivery of the elongated item being laid, specifically the drain tile, based on working conditions.

Regarding claims 11 and 16, although Lazure et al fails to explicitly disclose a laying method for cables, lines or conductors, Lazure et al's disclosure provides the basic steps and motivation required to develop a method as claimed by the applicant of the present invention. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to develp the method claims recited by the applicant.

Regarding claims 12 and 16-18, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a system with the capability to comprise a plurality of individually operated laying apparatus, such as the one described above, because multiple drain lines could potentially be required at a particular location with a high potential to flood.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lazure et al in view of Bowers (6,200,176).

Lazure et al discloses the invention as described above comprising a hydraulic system with a hydraulic pump.

However, Lazure et al fails to disclose that the pump comprises pre-loading for preventing cavitation.

Bowers discloses a marine jet drive pump preloader for reducing cavitation. The drive pump is hydraulically driven as an impeller 5 draws in water from an intake portion 2 (see column 4, lines 10-20). Bower discloses that the pump's impeller may comprise various configurations as long as a propelling device on a drive shaft or a motor causes fluid to be drawn from an intake housing into the pump's impeller whereby the impeller is preloaded with fluid thereby reducing the formation of a partial vacuum within the fluid about the impeller whereby cavitation is reduced (see column 3, lines 20-35 and column 4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the hydraulic system of Lazure et al comprising a pump to incorporate the preloading features taught by Bowers, because the phenomenon of cavitation can affect any mechanical devices subjected to fluid flowing a various rates and pressures. The Bower teaching is applicable to a hydraulic pump and adds value to the invention by reducing the potential to incur damaging effects caused by cavitation within the system over its operating life.

5. Claims 7-10 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lazure et al in view of Heiser (3,748,857).

Lazure et al discloses the invention as described above comprising a reversible hydraulic pump.

However, Lazure et al fails to disclose that the reversible pump comprises an actuator kept in intermediate position of balance by counteracting elastic means arranged inside respective containing chambers.

Heiser discloses a hydraulic motor control arrangement wherein a hydraulic motor is placed within a closed regulating hydraulic circuit, which is fed from a displaceable and reversible hydraulic pump. The invention provides for feedback for compensating against deviations of synchronous operation of the output motor drive in relation to the input member. Heiser discloses a displacement cylinder 5, a hydraulic pump 6 and a hydraulic motor 7 (see column 2, lines 13-20).

Specifically regarding claims 7-10 and 13-15, Heiser discloses that the displacement cylinder 5, which comprises a double-acting piston head 17 that operates against the action of elastic springs 18,19, positions a displacement element or adjusting means 16. The springs operate on the piston head 17 so that they exert counterbalancing forces or forces in opposite directions (see Fig. 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the programmable velocity-displacement function comprising elastic members, as taught by Heiser, to the invention of Lazure et al, because Lazure et al discloses a power feeder which serves to drive or push the drain tile out the bottom of the plow as the plow moves forward. Heiser's teaching enhances Lazure et al's invention by providing a system wherein a velocity-displacement function can be carried out with any desired power level and with low losses (see Heiser column 1).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Conti (4,692,063), Boettcher et al (3,788,575), Woodruff (4,454,999) and Lazure (4,142,817) disclose features that are pertinent to the present application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa M. Saldano whose telephone number is 703-605-1167. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather C. Shackelford can be reached on 703-308-2978. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

lms

HEATHER SHACKELFORD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600